

IN THE  
UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Stephen V. Deckers

Confirmation No.: 8460

Application No.: 10/656,040

Examiner: Khoi H. Tran

Filing Date: Sept. 04, 2003

Group Art Unit: 3651

Title: Disk Cartridge Data Storage Methods And Apparatus

Mail Stop Appeal Brief-Patents  
Commissioner For Patents  
PO Box 1450  
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on Feb. 23, 2005.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

( ) (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d) for the total number of months checked below:

( ) one month	\$120.00
( ) two months	\$450.00
( ) three months	\$1020.00
( ) four months	\$1590.00

( ) The extension fee has already been filled in this application.

(X) (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account **08-2025** the sum of \$500.00. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

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Respectfully submitted,

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PATENT APPLICATION  
Docket No.: 10004377-3

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND  
INTERFERENCES

5

In re application of:

Inventor(s): Stephen V. Deckers  
Serial No.: 10/656,040  
Filed: September 04, 2003  
Title: DISK CARTRIDGE DATA STORAGE METHODS AND APPARATUS  
Art Unit: 3651  
Examiner: Khoi H. Tran  
Confirmation No.: 8460

Mail Stop APPEAL BRIEF – PATENTS  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

APPEAL BRIEF

SIR OR MADAM:

This communication is the Appeal Brief in this application with respect to the Notice of Appeal filed on February 23, 2005. This Appeal Brief is being filed under the provisions of 37 C.F.R. § 41.37. The filing fee for filing this Appeal Brief, as set forth in 37 C.F.R. § 1.17(c), is included herewith as indicated on the attached Transmittal of Appeal Brief.

(Continued on next page.)

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Docket No. 10004377-3  
Appeal Brief



Real Party In Interest:

The real party in interest is Hewlett Packard Development Company, L.P. of Houston, Texas.

5 2. Related Appeals and Interferences:

There are no other appeals or interferences known to appellant, the appellant's legal representative, or assignee which will directly affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

10 3. Status of the Claims:

The following list provides the status of all the claims in the application:

Claims 1-27: cancelled;

Claim 28: rejected – currently on appeal;

Claim 37: rejected – currently on appeal;

15 Claim 38: rejected – currently on appeal;

Claims 39-43: cancelled;

Claim 44: rejected – currently on appeal;

Claim 45: rejected – currently on appeal;

Claim 46: rejected – currently on appeal;

20 Claims 47-59: withdrawn.

4. Status of Amendments:

A reply to the final action was filed by the Applicant, which included a request for reconsideration. The request for reconsideration was denied by the Examiner. No  
25 amendments to the claims were made or entered after the final action.

5. Summary of Claimed Subject Matter:

30 The summary corresponds to independent claim 28. Discussions about elements and recitations can be found at least at the cited locations in the specification and drawings. A data storage apparatus includes a host device and a first storage media that has a tape cartridge form factor, and which includes a hard disk drive for storage of data. The data storage apparatus also includes a second storage media that has the tape cartridge form factor, and which includes a length of tape for storage of

data. The data storage apparatus further includes a picker configured to move the first storage media and the second storage media, and a docking device in communicative linkage with the host device and adapted to receive the first storage media and the second storage media from the picker. (Specification at page 1, lines 11-27, page 7, line 16 through page 19, line 18, and figures 1-4, reference characters 110, 140, 210, 240 300, 330.)

6. Grounds of Rejection to be Reviewed on Appeal:

- (A). Whether Figure 4 of the drawings meets the requirements of 37 CFR 1.83(a).
- (B). Whether claim 45 is unpatentable under 35 U.S.C. § 112, first paragraph.
- (C). Whether claims 28, 37, 38, and 44 are unpatentable under 35 U.S.C. § 103 over Kulakowski (6,731,455) in view of Stefansky (5,329,412).
- (D). Whether claims 45 and 46 are unpatentable under 35 U.S.C. § 103 over Kulakowski in view of Stefansky and further in view of Kim (5,666,342).

7. Argument:

(A). Whether Figure 4 of the drawings meets the requirements of 37 CFR 1.83(a):

Figure 4 of the drawings has been objected to under 37 CFR 1.83(a). In making the objection, the Examiner contends that Figure 4 “fails to show how the integrated docking device 330 can actually accept both tape and HDD media without encountering any interference by element 122,” and further that Figure 4 “fails to show, in structural detail, how the docking device 330 can actually accept and read both tape and HDD media.” The Examiner also states, “elements 122 and 231 do not provide sufficient structure for one of ordinary skill in the art to ascertain the physical make up of the integrated docking device.”

The Applicant notes that 37 CFR 1.83(a), in its entirety, states:

*“The drawing in a nonprovisional application must show every feature of the invention specified in the claims. However, conventional features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (e.g., a labeled rectangular box).”*

The Applicant contends that Figure 4 fully complies with the requirements of 37 CFR 1.83(a) because Figure 4 shows every feature of the invention specified in the claims, although conventional features disclosed in the description and claims are illustrated in Figure 4 in the form of graphical drawing symbols or labeled representations, because detailed illustration of such conventional features is not essential for a proper understanding of the invention.

Although the Applicant traverses the Examiner's statement that Figure 4 "fails to show how the integrated docking device 330 can actually accept both tape and HDD media without encountering any interference by element 122," the Applicant contends that 37 CFR 1.83(a) does not require that Figure 4 alone shows how the integrated docking device 330 can actually accept both tape and HDD media without encountering any interference by element 122. Therefore, this statement by the Examiner is not relevant.

Furthermore, although the Applicant traverses the Examiner's statement that Figure 4 "fails to show, in structural detail, how the docking device 330 can actually accept and read both tape and HDD media," the Applicant contends that 37 CFR 1.83(a) does not require Figure 4 alone to show, in structural detail, how the docking device 330 can actually accept and read both tape and HDD media. Therefore, this statement by the Examiner is not relevant.

Moreover, although the Applicant traverses the Examiner's statement that "elements 122 and 231 do not provide sufficient structure for one of ordinary skill in the art to ascertain the physical make up of the integrated docking device," the Applicant contends that 37 CFR 1.83(a) does not require that elements 122 and 231 alone provide sufficient structure for one of ordinary skill in the art to ascertain the physical makeup of the integrated docking device. Therefore, this statement by the Examiner is also not relevant.

The Applicant contends further that Figure 4, along with the other figures, together with a reading of the description, enable one of reasonable skill in the art to understand, and/or to use, and/or to make, the invention.

Accordingly, the Applicant contends for at least the reasons stated above that Figure 4 fully complies with the requirements of 37 CFR 1.83(a), and that the objection to Figure 4 under 37 CFR 1.83(a) should be withdrawn.

(B). Whether claim 45 is unpatentable under 35 U.S.C. § 112, first paragraph.

Claim 45 has been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Claim 45 depends from claim 28, which has not been rejected under 35 U.S.C. § 112, first paragraph.

5 The Applicant notes that, “[t]he test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation.” (MPEP 2164.01.)

Claim 45 includes the following elements:

10 *a data storage apparatus, comprising:*

*a host device;*

*a first storage media having a tape cartridge form factor and including a hard disk drive for storage of data;*

15 *a second storage media having the tape cartridge form factor and including a length of tape for storage of data;*

*a picker configured to move the first storage media and the second storage media; and,*

20 *a docking device in communicative linkage with the host device and adapted to receive the first storage media and the second storage media from the picker, wherein the docking device comprises:*

*a docking interface adapted to communicatively link the host device with the first data storage media when the first storage media is received by the docking device; and,*

25 *a tape read/write device adapted to communicatively link the host device with the second storage media when the second storage media is received by the docking device.*

30 The subject matter of claim 45 is described generally in the specification as follows. Tape drives and hard disk drives each employ specific types of media on which to store data. That is, tape drives employ reels of magnetic tape strips as data storage media, while hard disk drives employ one or more stacked hard disk “platters” as data storage media. Typically, the magnetic tape type of media is supported on one or more reels which are enclosed in a cartridge shell or casing. The tape, together with the cartridge shell, is referred to as a “tape cartridge.” Such tape cartridges are configured

to be selectively placed into a slot, or opening, or a tape drive, wherein the tape is extracted from the cartridge so that data can be read from and/or written to the tape.

When the reading and/or writing of the tape is completed, the tape is wound back into the cartridge, and the tape cartridge is removed from the slot of the tape drive and placed onto a storage rack or the like.

A disk cartridge 110 can include a hard disk memory medium 113 that is operably supported within a cartridge shell 111. An apparatus 300 can include at least one disk cartridge 110 and at least one tape cartridge 240. The disk cartridge 110 can include a cartridge interface 121 that can act as a gateway or port through which data is passed into and out of the disk cartridge. The cartridge interface 121 can be supported in any of a number of positions on the disk cartridge. The cartridge interface 121 can be at least a portion of a connector. For example, the cartridge interface 121 can be at least a portion of any of a number of known connectors such as those known by the designations of SCSI, IDE, Fibre Channel, and the like. The cartridge interface 121 can also be substantially in the form of at least a portion of a wireless transmission device or the like which employs any of a number of wireless transmission means such as infrared, laser, short range radio wave and the like.

The apparatus 300 can include a docking device 330 that includes a receptacle 131 that is defined on the docking device 330. The docking device 330 can further include a docking interface 122 supported within the receptacle 131. The docking interface 122 is configured to communicatively link with the cartridge interface 121 when the disk cartridge 110 is placed into the receptacle 131. The docking device 330 can also include a tape read/write device 231 that is configured to perform read/write operations on a tape cartridge 240 when the tape cartridge is placed into the receptacle 131. Thus, the docking device 330 can be configured to perform read/write operations on both tape cartridges 240 and disk cartridges 110. The disk cartridge 110 and the tape cartridge 240 can adhere to a common cartridge form factor, such as those discussed above.

A storage support 250 can be included to support the tape cartridges 250 and the disk cartridges 110. An automatic cartridge handling device 210 can be included in the apparatus 300. The automatic cartridge handling device 210 can be configured to move disk cartridges 110 and tape cartridges 240 between the storage support 250 and the docking device 330. The automatic cartridge handling device 210 can include

a robotic gripper arm 212 and a controller 214 that is in signal communication with the gripper arm. The gripper arm 212 is configured to grip the disk cartridge 110 and tape cartridge 240.

The docking device 330 can be in signal communication with a host device 140 so that data can be transferred between the disk cartridge 110 and the host device by way of the cartridge interface 121 and the docking interface 122, and/or between the tape cartridge 240 and the host device by way of the tape read/write device 231. (See Applicant's written description, page 1, lines 11-27, page 7, line 16 through page 19, line 18, and figures 1-4.)

The drawings show all of the claimed elements including, but not necessarily limited to, the following elements: a plurality of disk cartridges 110, each having a cartridge interface 121, a plurality of tape cartridges 240, a storage support 250, a gripper arm 212, a controller 214, a host device 140, a docking device 330 defining a receptacle 131, and having a docking interface 122 and a tape read/write device 231.

By providing the information as described above, the specification and drawings describe the subject matter defined by claim 45 and enable any person skilled in the art to make and use the subject matter defined by claim 45.

Accordingly, the Applicant contends that claim 45 complies fully with the enablement requirement of 35 U.S.C. § 112, first paragraph.

(C). Whether claims 28, 37, 38, and 44 are unpatentable under 35 U.S.C. § 103 over Kulakowski (6,731,455) in view of Stefansky (5,329,412).

Claims 28, 37, 38, and 44 have been rejected under 35 U.S.C. § 103 as being unpatentable over Kulakowski (6,731,455) in view of Stefansky (5,329,412). Claims 37, 38 and 44 depend from claim 28, and claims 37, 38 and 44 therefore include all of the elements and/or limitations of claim 28.

The Applicant contends that the rejection is erroneous because a *prima facie* case of obviousness has not been established in regard to claim 28. The Applicant notes that a *prima facie* case of obviousness requires, *inter alia*, that "the prior art reference (or references when combined) must teach or suggest all the claimed limitations." (MPEP 2142.)

The Applicant contends that Kulakowski and Stefansky do not, either individually or when combined, disclose all of the elements and/or limitations of claim 28, as is



required for an obviousness rejection. That is, Kulakowski and Stefansky, either individually or when combined, do not disclose the following elements and/or limitations contained in claim 28:

*a first storage media having a tape cartridge form factor and including a hard disk drive for storage of data;*

*a second storage media having the tape cartridge form factor and including a length of tape for storage of data; and,*

*a docking device in communicative linkage with the host device and adapted to receive the first storage media and the second storage media from the picker.*

Kulakowski discloses a disk cartridge and Stefansky discloses a disk cartridge. However, both Kulakowski and Stefansky, either individually or when combined, fail to disclose all of the above elements and/or limitations of claim 28. Specifically, Kulakowski and Stefansky do not disclose a data storage apparatus that includes both the first storage media and the second storage media, which both have the same tape cartridge form factor. Rather, Kulakowski and Stefansky discloses only a data storage apparatus that includes a hard disk cartridge that does not have a tape cartridge form factor.

Also, Kulakowski and Stefansky do not disclose a data storage apparatus that includes the docking device in communicative linkage with the host device and adapted to receive both the first storage media and the second storage media from the picker.

Rather, Kulakowski and Stefansky disclose only a data storage apparatus that includes a docking device that is adapted to receive only a hard disk cartridge.

Although the Examiner contends that the apparatus of Kulakowski is capable of handling tape cartridges or a combination of tape and hard disk drive devices, the Applicant traverses this contention by the Examiner. At most, Kulakowski mentions the word, "tape." However, Kulakowski discloses only that computer readable media on which to store the controlling software for the device of Kulakowski can include tape, along with CD-ROM, EPROM, RAM, DRAM, SRAM, and the like. That is, although Kulakowski does mention the word, "tape," Kulakowski does not disclose tape in manner of the Applicant's claim 28. More specifically, Kulakowski does not disclose a tape cartridge and does not disclose a docking device that is adapted to receive both a hard disk cartridge and a tape cartridge.

Based on the above arguments, the Applicant asserts that the cited references do not teach or suggest all of the claimed limitations as set forth in claim 28, as is required for a finding of obviousness. Therefore, a *prima facie* case of obviousness has not been established in regard to claim 28 because all of the elements and/or limitations of claim 28 are not taught or suggested by the cited prior art. That is, the limitations of claim 28 render the claimed subject matter unobvious over the prior art because the prior art does not disclose these limitations.

(D). Whether claims 45 and 46 are unpatentable under 35 U.S.C. § 103 over Kulakowski in view of Stefansky and further in view of Kim (5,666,342).

Claims 45 and 46 have been rejected under 35 U.S.C. § 103 as being unpatentable over Kulakowski (6,731,455) in view of Stefansky (5,329,412) and further in view of Kim (5,666,342). Claim 46 depends from claim 45 and therefore includes all of the elements and/or limitations of claim 45.

The Applicant contends that the rejection is erroneous because a *prima facie* case of obviousness has not been established in regard to claim 45. Specifically, the Applicant contends that Kulakowski and Stefansky and Kim do not, either individually or when combined, disclose all of the elements and/or limitations of claim 45, as is required for an obviousness rejection. That is, Kulakowski and Stefansky and Kim, either individually or when combined, do not disclose the following elements and/or limitations contained in claim 45:

*a first storage media having a tape cartridge form factor and including a hard disk drive for storage of data;*

*a second storage media having the tape cartridge form factor and including a length of tape for storage of data; and,*

*a docking device in communicative linkage with the host device and adapted to receive the first storage media and the second storage media from the picker, wherein the docking device comprises:*

*a docking interface adapted to communicatively link the host device with the first data storage media when the first data storage media is received by the docking device; and,*

*a tape read/write device adapted to communicatively link the host device with the second storage media when the second storage media is received by the docking device.*

At most, Kulakowski discloses a disk cartridge and Stefansky discloses a disk cartridge, and Kim discloses a combination cassette tape deck/CD player. However, Kulakowski and Stefansky and Kim, either individually or when combined, fail to disclose all of the above elements and/or limitations of claim 45. Specifically, Kulakowski, Stefansky, and Kim do not teach or suggest both a hard disk cartridge and a tape cartridge that both have a tape cartridge form factor. Rather, Kulakowski and Stefansky disclose only a hard disk cartridge that does not have a tape cartridge form factor, while Kim discloses only a bare optical disk (*a.k.a.* CD) and a cassette tape.

Furthermore, Kulakowski, Stefansky, and Kim do not teach or suggest a docking device configured to receive both the first storage media and the second storage media, wherein the docking device includes a docking interface adapted to communicatively link the host device with the first storage media, which has a tape cartridge form factor, and a tape read/write device adapted to communicatively link the host device with the second storage media, which also has the tape cartridge form factor. Rather, Kulakowski and Stefansky disclose only a docking device adapted to receive a hard disk cartridge that does not have a tape cartridge form factor, while Kim discloses only a first docking device adapted to receive a tape cassette and a second docking device adapted to receive a hard optical disk.

The Applicant asserts that the cited references do not teach or suggest all of the claimed limitations as set forth in claim 45, as is required for a finding of obviousness.

Therefore, a *prima facie* case of obviousness has not been established in regard to claim 45 because all of the elements and/or limitations of claim 45 are not taught or suggested by the cited prior art. That is, the limitations of claim 45 render the claimed subject matter unobvious over the prior art because the prior art does not disclose these limitations.

Moreover, the Applicant notes that, "if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." (MPEP 2143.01.) Also, "if the proposed modification of combination of the prior art would change the

principle of operation of the prior art being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.” (Id.)

The Applicant contends that the apparatus of Kim is configured to accept only tape cassettes and bare optical disks (CD's) – not disk cartridges. (See Kim, Figs. 1-5, and col. 2, lines 15-20.) Thus, modification of Kim to accept the disk cartridges of Kulakowski and Stefansky would render the invention of Kim unsatisfactory for its intended purpose of playing CD's. Furthermore, such a modification of Kim would change the principle of operation of Kim, because Kim would no longer be capable of playing CD's. Accordingly, there is no suggestion or motivation to combine Kim with Kulakowski and/or Stefansky, and the teachings of Kulakowski and/or Stefansky and/or Kim are not sufficient to render claim 45 *prima facie* obvious.

Therefore, for the reasons stated above, a *prima facie* case of obviousness has not been established in regard to claim 45, and the limitations of claim 45 render the claimed subject matter unobvious over the prior art because the prior art does not disclose these limitations.

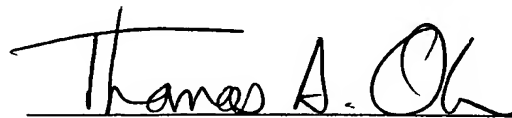
#### Summary

The Applicant respectfully considers claims 28, 37, 38, and 44-46 to be in condition for allowance, and respectfully requests the Board to overturn the final rejections of those claims, and further requests that those claims be allowed.

Dated this 23<sup>rd</sup> day of April, 2005.

Respectfully submitted,

Stephen V. Deckers (Applicant)



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8. Claims Appendix:

Claim 28. A data storage apparatus, comprising:

a host device;

5 a first storage media having a tape cartridge form factor and including a hard disk drive for storage of data;

a second storage media having the tape cartridge form factor and including a length of tape for storage of data;

10 a picker configured to move the first storage media and the second storage media; and

a docking device in communicative linkage with the host device and adapted to receive the first storage media and the second storage media from the picker.

15 Claim 37. The data storage apparatus of claim 28 wherein the tape cartridge form factor is selected from the group consisting of Digital Audio Tape (DAT), Digital Data Storage (DDS), Digital Linear Tape (DLT), and Linear Tape Open (LTO).

20 Claim 38. The data storage apparatus of claim 28 wherein the picker moves the first storage media and the second storage media between an isolatively stored position and a communicatively linked position.

Claim 44. The data storage apparatus of claim 28 wherein:

the first data storage device is a disk cartridge; and

the second data storage device is a tape cartridge.

25 Claim 45. The data storage apparatus of claim 28 wherein the docking device comprises:

a docking interface adapted to communicatively link the host device with the first data storage media when the first storage media is received by the docking device; and

30 a tape read/write device adapted to communicatively link the host device with the second storage media when the second storage media is received by the docking device.

Claim 46. The data storage apparatus of claim 45 further comprising a receptacle defined by the docking device and configured to receive the first storage media and the second storage media, wherein the docking interface and the tape read/write device are located substantially within the receptacle.

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-- End of Claims Appendix --

10 (Continued on next page.)

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9. Evidence Appendix:

No evidence is submitted in the Evidence Appendix.

10. Related Proceedings Appendix:

No evidence is submitted in the Related Proceedings Appendix.